



National Aeronautics and Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058

Biographical Data

DAFYDD (DAVE) RHYS WILLIAMS (M.D.) ASTRONAUT, CANADIAN SPACE AGENCY (FORMER)

PERSONAL DATA: Born May 16, 1954, in Saskatoon, Saskatchewan, Dave Williams is married and has two children. He enjoys flying, scuba diving, hiking, sailing, kayaking, canoeing, downhill and cross-country skiing.

EDUCATION: Education: Attended high school in Beaconsfield, Quebec. Graduated from McGill University, Montréal, Quebec, with a Bachelor of Science, Major in Biology (1976). Obtained a Master of Science from the Physiology Department, a Doctorate of Medicine and a Master of Surgery from the Faculty of Medicine, McGill University, (1983).

Completed a residency in family practice in the Faculty of Medicine, University of Ottawa, (1985). Obtained a fellowship in emergency medicine from the Royal College of Physicians and Surgeons of Canada, following completion of a residency in emergency medicine at the University of Toronto (1988). He is a Fellow of the Royal College of Physicians and Surgeons and the College of Family Physicians of Canada.

AFFILIATIONS: Member of the College of Physicians of Ontario, the Ontario Medical Association, the Canadian Association of Emergency Physicians, the Undersea and Hyperbaric Medicine Society and the Aerospace Medical Association. Past affiliations include the Society for Neuroscience, the New York Academy of Science and the Montreal Physiological Society.

SPECIAL HONORS: Awarded the Commonwealth Certificate of Thanks (1973) and the Commonwealth Recognition Award (1975) for his contribution to the Royal Life Saving Society of Canada. Academic awards include the A.S. Hill Bursary, McGill University (1980); Walter Hoare Bursary, McGill University (1981); J.W. McConnell Award, McGill University (1981 to 1983). Faculty Scholar (1982) and University Scholar (1983), Faculty of Medicine, McGill University. Psychiatry Prize, Wood Gold Medal, and Dean's Honour List, Physiology Department, McGill University, for postgraduate research (1983). Second prize (1986, 1987, 1988) for participation in the University of Toronto Emergency Medicine Research Papers Program. NASA Space Flight Medal (1998); Melbourne W. Boynton Award, American Astronautical Society (1999); Ramon y Cajal Institute of Neurobiology, Spanish Council for Scientific Research (CSIC) Bronze Medal for contribution to neuroscience during Mission STS-90 (1999); Rotary National Award for Space Achievement (2000); NASA Outstanding Leadership Medal (2002); Patron of the International Life

Saving Federation (2002); Spokesperson for the Life Saving Society Canada and Honorary Ambassador of the SmartRisk Foundation; NASA JSC Space and Life Sciences Directorate Special Professional Achievement Award (2003) for the implementation of the Automatic External Defibrillator Program that has saved several lives at the NASA Johnson Space Center; Honorary Doctor of Laws, University of Saskatchewan (2004).

EXPERIENCE: Dave Williams pursued postgraduate studies in advanced invertebrate physiology at the Friday Harbour Laboratories at the University of Washington, Seattle, but his interests shifted to vertebrate neurophysiology when, for his master's thesis, he became involved in basic science research on how adrenal steroid hormones modify the regulation of sleep-wake cycles. While working in the Neurophysiological Laboratories at the Allan Memorial Institute for Psychiatry, Williams assisted in clinical studies of slow wave potentials within the central nervous system.

His clinical research in emergency medicine has included studies evaluating the initial training and skill retention of cardiopulmonary resuscitation (CPR) skills, patient survival from out-of-hospital cardiac arrest, the early identification of trauma patients at high risk, and the efficacy of tetanus immunization in the elderly.

In 1988, Williams became an emergency physician with the Department of Emergency Services at Sunnybrook Health Science Centre, while also lecturing with the Department of Surgery at the University of Toronto. He served as a member of the Air Ambulance Utilization Committee with the Ministry of Health in Ontario, both as an academic emergency physician and later as a representative of community emergency physicians. In addition, he has trained basic ambulance attendants, paramedics, nurses, residents, and practicing physicians in cardiac and trauma resuscitation with both the Canadian Heart and Stroke Foundation and the American College of Surgeons.

From 1989 to 1990 Williams served as an emergency physician with the Emergency Associates of Kitchener, Waterloo and as the medical director of the Westmount Urgent Care Clinic. In 1990, he returned to Sunnybrook as medical director of the Advanced Cardiac Life Support Program and also as the coordinator of postgraduate training in emergency medicine. Subsequently, Williams became the director of the Department of Emergency Services at Sunnybrook Health Science Centre and assistant professor of Surgery at the University of Toronto. He is currently an adjunct professor of Surgery at the University of Toronto and McGill University.

In June 1992 the Canadian Space Agency selected Williams as one of four successful candidates from a field of 5330 applicants to begin astronaut training. He completed basic training, and in May 1993, was appointed manager of the Missions and Space Medicine Group within the Canadian Astronaut Program. His assignments included supervising the implementation of operational space medicine activities for the Canadian Astronaut Program Space Unit Life Simulation (CAPSULS) Project. During this seven-day simulated space mission, which was conducted at the Defence R&D Canada, Toronto (Formerly DCIEM), Williams was the principal investigator of a study to evaluate the initial training and retention of resuscitation skills by non-medical astronauts. He was also one of the crew members and the crew medical officer.

NASA EXPERIENCE: In January 1995 Williams was selected to join the international class of

NASA mission specialist astronaut candidates. He reported to the Johnson Space Center (JSC) in March 1995 for a year of training and evaluation. Following his successful completion of this training in May 1996, he was assigned to the Payloads and Habitability Branch of the NASA Astronaut Office. As a representative of the Office, he participated in the JSC Institutional Review Board and Science Merit Review Committee, the Independent Advisory Team for the International Space Station Crew Health Care System (CHeCs), the JSC Radiation Constraints Panel and was involved in the development of the Human Research Facility.

From July 1998 until September 2002, Dave Williams held the position of Director of the Space and Life Sciences Directorate at the Johnson Space Center in Houston, Texas. With this appointment, he became the first non-American to hold a senior management position within NASA. He concurrently held a six-month position as the first deputy associated administrator for crew health and safety in the Office of Space Flight at NASA Headquarters in 2001.

In addition to these assignments, Dave Williams continued to take part in astronaut training to maintain and further develop his skills. In October 2001, he became an aquanaut through his participation in the joint NASA-NOAA (National Oceanic and Atmospheric Administration) NEEMO 1 mission, a training exercise held in Aquarius, the world's only underwater research laboratory. During this seven-day exercise, Williams became the first Canadian to have lived and worked in space and in the ocean.

In 2006, Dave Williams took the lead of NEEMO 9 as the crew commander of this mission dedicated to assess new ways to deliver medical care to a remote location, as would be done in a long space flight.

A veteran of two space flights, STS-90 in 1998 and STS-118 in 2007, Dave Williams has logged over 687 hours in space including 3 spacewalks (EVAs) totaling 17 hours and 47 minutes. Dave Williams retired from active astronaut status as of March 1, 2008.

SPACE FLIGHT EXPERIENCE: STS-90 (April 17 to May 3, 1998). Dave Williams participated in STS-90 as Mission Specialist 3 aboard Space Shuttle Columbia. During the 16-day flight, called Neurolab, the seven-person crew served as both experiment subjects and operators for 26 individual life science experiments. These experiments, dedicated to the advancement of neuroscience research, focused on the effects of microgravity on the brain and the nervous system. Williams also functioned as the crew medical officer, the flight engineer during the ascent phase, and was trained to perform contingency spacewalks. Columbia orbited the Earth 256 times, covered over 10 million kilometres and spent over 381 hours in space.

STS-118 (August 8-21, 2007) was the 119th space shuttle flight, the 22nd flight to the station, and the 20th flight for Endeavour. During the mission Endeavour's crew successfully added another truss segment, a new gyroscope and external spare parts platform to the International Space Station. A new system that enables docked shuttles to draw electrical power from the station to extend visits to the outpost was activated successfully. Williams participated in three of a total of four spacewalks (EVAs). Endeavour carried some 5,000 pounds of equipment and supplies to the station and returned to Earth with some 4,000 pounds of hardware and no longer needed equipment. Traveling 5.3 million miles in space, the STS-118 mission was completed in 12 days, 17 hours, 55 minutes and 34 seconds.

MARCH 2008